# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

**NABL** - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377


Job No: CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/CEMENT/2016-17 Date: 01.08.2016

## TEST REPORT ON CEMENT

| | | |
|---|---|---|
| * CUSTOMER | : | **Asst. Executive Engineer**, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| *AGENCY | : | **Technical Manager (West),** KRIDL, Bangalore. |
| *NAME OF THE WORK | : | Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| *REFERENCE | : | BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| SAMPLE ID | : | Cement |
| SAMPLE RECEIVED ON | : | 30.07.2016 |
| PERIOD OF TESTING | : | 30.07.2016 to 01.08.2016 |

The results of the tests conducted on the cement sample are as follows:

| Sl. No | Descriptions | Test Method as per IS | Test Result | Requirements as per IS: 8112-2013 |
|---|---|---|---|---|
| 1 | Standard Consistency | IS-4031 (Part -4) 1988(RA-2009) | 28.00 % | - |
| 2 | a) Initial Setting Time | IS-4031 (Part -5) 1988(RA-2009) | 155 Minutes | Not Less than 30 Minutes |
| | b) Final Setting Time | IS-4031 (Part -5) 1988(RA-2009) | 480 Minutes | Not More than 600 Minutes |
| 3 | Soundness by Le Charther Method | IS-4031 (Part-3) 1988(RA-2009) | 1 mm | Not more than 10mm |

*Information is furnished by the Customer/Representative.

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T-2377


Job No: CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/SAND-Gradation/2016-17 : 01.08.2016

## TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

| | |
|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| * Name of Work | : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| Technical Reference | : IS : 2386 Part 1 - 1963 RA-2007 |
| Sample ID | : Fine Aggregates |
| Sample Received on | : 30.07.2016 |
| Date of Testing | : 01.08.2016 |

Total Wt. of Aggregates in gms 1000

| Is Sieve Size in mm | Cumulative Weight Passing in % | Specific Limits as per IS 383-1970 (RA- 2007) | | | |
|---|---|---|---|---|---|
| | | Zone-I | Zone-II | Zone-III | Zone-IV |
| 10 | 100 | 100 | 100 | 100 | 100 |
| 4.75 | 95.80 | 90-100 | 90-100 | 90-100 | 95-100 |
| 2.36 | 77.30 | 60-95 | 75-100 | 85-100 | 95-100 |
| 1.18 | 57.50 | 30-70 | 55-90 | 75-100 | 90-100 |
| 600 Micron | 29.30 | 15-34 | 35-59 | 60-79 | 80-100 |
| 300 Micron | 16.50 | 5-20 | 8-30 | 12-40 | 15-50 |
| 150 Micron | 5.00 | 0-10 | 0-10 | 0-10 | 0-15 |

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Lab No: CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/AGG/GR/2016-17 : 01.08.2016

## TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

| | |
|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| * Name of Work | : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| Technical Reference | : IS : 2386 Part I -1963 RA-2007 |
| Sample ID | : Coarse Aggregates (40mm) |
| Sample Received on | : 30.07.2016 |
| Date of Testing | : 01.08.2016 |

Total Wt. of Aggregates in gms= 7000

| Is Sieve Size in mm | Cumulative Weight Passing in % | Specific Limits as per IS 383-1970 (RA- 2007) | |
|---|---|---|---|
| | | Graded | Single Sized |
| 80 | 100 | 100 | - |
| 63 | 100 | - | 100 |
| 40 | 98.21 | 95-100 | 85-100 |
| 20 | 33.93 | 30-70 | 0-20 |
| 10 | 16.07 | 10-35 | 0-5 |
| 4.75 | 1.71 | 0-5 | - |

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005


Job No: CTCE/BBMP/W.No.03/KRIDL /STEEL/2016-17 01.08.2016

## TEST REPORT ON REINFORCEMENT STEEL

Customer : **Asst. Executive Engineer**, Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of the Work : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore.

Reference : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014

Date of Test : 01.08.2016

Technical Reference : IS: 1786-2008

| Sl. No | Nominal size (dia) (mm) | Mass per metre (Kg/mtr) | TENSILE STRENGTH | | | Bend Test | Rebend Test |
|---|---|---|---|---|---|---|---|
| | | | 0.20% proof stress/Yield stress $N/mm^2$ | Tensile strength (Ultimate stress) $N/mm^2$ | Elongation percent gauge length | | |
| 1 | 10 | 0.62 | 513 | 556 | 13.20 | O.K | O.K |

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Job No: CTCE/BBMP/W No.03/KRIDL/STEEL/2016-17 01.08.2016

## TEST REPORT ON REINFORCEMENT STEEL

| | | |
|---|---|---|
| Customer | : | **Asst. Executive Engineer**, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Agency | : | **Technical Manager (West)**, KRIDL, Bangalore. |
| Name of the Work | : | Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Reference | : | BBMP/EE(YNK.D)/WO/460/2013-14 Dated 06.02.2014 |
| Date of Test | : | 01.08.2016 |
| Technical Reference | : | IS: 1786-2008 |

| Sl. No | Nominal size (dia) (mm) | Mass per metre (Kg/mtr) | TENSILE STRENGTH | | | Bend Test | Rebend Test |
|---|---|---|---|---|---|---|---|
| | | | 0.20% proof stress/Yield stress $N/mm^2$ | Tensile strength (Ultimate stress) $N/mm^2$ | Elongation percent gauge length | | |
| 1 | 12 | 0.89 | 515 | 558 | 13.35 | O.K | O.K |

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T-2377


No: CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/CC Solid Block/2016-17 : 01.08.2016

## TEST REPORT ON SOLID CONCRETE BLOCKS

| | |
|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| * Name of the Work | : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| Sample Received on | : 30.07.2016 |
| Date of Testing | : 01.08.2016 |
| Size of Blocks | : 400mm x 200mm x 200mm |
| Cross Sectional Area | : 80000 $mm^2$ |
| Technical Reference | : IS: 2185 (Part 1) - 2005 |
| No. of Blocks Tested | : 08 |

| Sl.No. | Block ID | Wt. in Kg | Failure load (KN) | Compressive strength ($N/mm^2$) | Requirement as per IS 2185 (Part 1) - 2005 |
|---|---|---|---|---|---|
| 1 | Block 1 | 35.16 | 260.3 | 3.25 | Minimum required Compressive Strength of Individual Units 3.20 $N/mm^2$ |
| 2 | Block 2 | 35.26 | 261.2 | 3.27 | |
| 3 | Block 3 | 34.25 | 262.3 | 3.28 | |
| 4 | Block 4 | 36.35 | 261.8 | 3.27 | |
| 5 | Block 5 | 34.28 | 262.4 | 3.28 | |
| 6 | Block 6 | 35.16 | 259.3 | 3.24 | |
| 7 | Block 7 | 34.69 | 260.5 | 3.26 | |
| 8 | Block 8 | 35.15 | 262.5 | 3.28 | |

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Lab No: CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/CUBE/2016-17 05.09.2016

## TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

| | |
|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| * Name of the work | : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| * Sample ID | : Cement Concrete |
| Size of cubes | : 150mmx150mmx150mm |
| Cross Sectional Area | : 22500 $mm^2$ |
| Technical Reference | : IS: 516-1959 (Reaffirmed 2008) |
| * Grade of Concrete | : $M_{15}$ |
| Compressive Strength as on | : 28th day |
| Sample Received on | : 05.09.2016 |

| Sl.No. | * Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 08.08.2016 | 05.09.2016 | 8.110 | 363.8 | 16.17 |
| 2 | 08.08.2016 | 05.09.2016 | 8.228 | 375.6 | 16.69 |
| 3 | 08.08.2016 | 05.09.2016 | 8.372 | 389.7 | 17.32 |

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Job No.: CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/CUBE/2016-17 15.09.2016

## TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

| | |
|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| * Name of the work | : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| * Sample ID | : Cement Concrete |
| Size of cubes | : 150mmx150mmx150mm |
| Cross Sectional Area | : 22500 $mm^2$ |
| Technical Reference | : IS: 516-1959 (Reaffirmed 2008) |
| * Grade of Concrete | : $M_{20}$ |
| Compressive Strength as on | : 28th day |
| Sample Received on | : 15.09.2016 |

| Sl.No. | * Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 18.08.2016 | 15.09.2016 | 8.103 | 478.3 | 21.26 |
| 2 | 18.08.2016 | 15.09.2016 | 8.235 | 493.2 | 21.92 |
| 3 | 18.08.2016 | 15.09.2016 | 8.325 | 510.2 | 22.68 |

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Lab No: CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/CUBE/2016-17 15.09.2016

## TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

| | |
|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| * Name of the work | : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| * Sample ID | : Cement Concrete |
| Size of cubes | : 150mmx150mmx150mm |
| Cross Sectional Area | : 22500 $mm^2$ |
| Technical Reference | : IS: 516-1959 (Reaffirmed 2008) |
| * Grade of Concrete | : $M_{25}$ |
| Compressive Strength as on | : 28th day |
| Sample Received on | : 15.09.2016 |

| Sl.No. | * Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 18.08.2016 | 15.09.2016 | 8.116 | 485.3 | 21.57 |
| 2 | 18.08.2016 | 15.09.2016 | 8.235 | 493.5 | 21.93 |
| 3 | 18.08.2016 | 15.09.2016 | 8.310 | 512.3 | 22.77 |

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CTCE/BBMP/W.No.03/KRIDL/CSR-07/106g/CUBE/2016-17 23.09.2016

## TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

| | |
|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
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| * Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| * Sample ID | : Cement Concrete |
| Size of cubes | : 150mmx150mmx150mm |
| Cross Sectional Area | : 22500 $mm^2$ |
| Technical Reference | : IS: 516-1959 (Reaffirmed 2008) |
| * Grade of Concrete | : $M_{20}$ |
| Compressive Strength as on | : 28th day |
| Sample Received on | : 23.09.2016 |

| Sl.No. | * Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 26.08.2016 | 23.09.2016 | 8.120 | 485.3 | 21.57 |
| 2 | 26.08.2016 | 23.09.2016 | 8.290 | 493.5 | 21.93 |
| 3 | 26.08.2016 | 23.09.2016 | 8.378 | 513.6 | 22.83 |

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## TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

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|---|---|
| * Customer | : **Asst. Executive Engineer,** Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Agency | : **Technical Manager (West),** KRIDL, Bangalore. |
| * Name of the work | : Improvements to Veerasagara main road and drain and construction of samudaya bhavan at Doddabettahalli village in Attur Ward No.03 of Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| * Reference | : BBMP/EE(YNK.D)/W.O/460/2013-14 Dated: 06.02.2014 |
| * Sample ID | : Cement Concrete |
| Size of cubes | : 150mmx150mmx150mm |
| Cross Sectional Area | : 22500 $mm^2$ |
| Technical Reference | : IS: 516-1959 (Reaffirmed 2008) |
| * Grade of Concrete | : $M_{30}$ |
| Compressive Strength as on | : 28th day |
| Sample Received on | : 23.09.2016 |

| Sl.No. | * Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 26.08.2016 | 23.09.2016 | 8.228 | 474.9 | 21.11 |
| 2 | 26.08.2016 | 23.09.2016 | 8.349 | 493.6 | 21.94 |
| 3 | 26.08.2016 | 23.09.2016 | 8.413 | 516.8 | 22.97 |

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